Why Laura isn't CEO

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CHICAGO BOOTH
The University of Chicago Booth School of Business

Based on:
"Dynamics of the Gender Gap for Young Professionals in the Corporate and Financial Sectors"

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Motivation

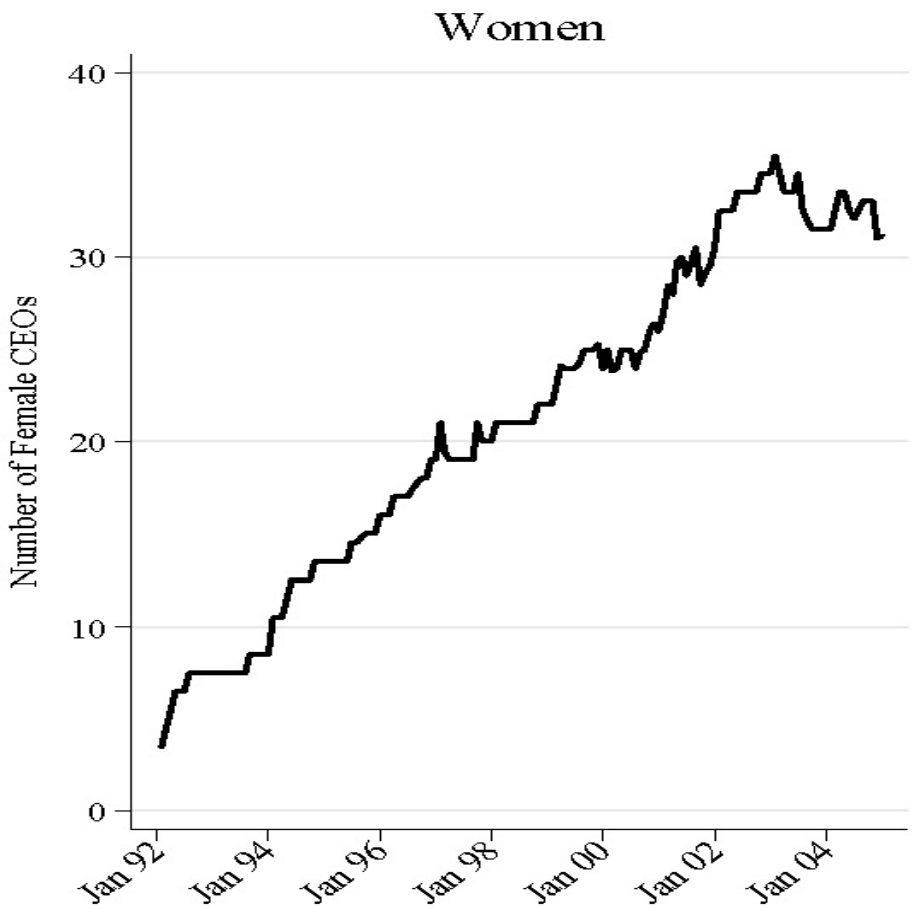
⦿Narrowing of the gender gap in business education:

- Among MBAs with BAs from selective institutions, fraction women increased from 13 percent in 1970-73 to 40 percent in 1990-93.

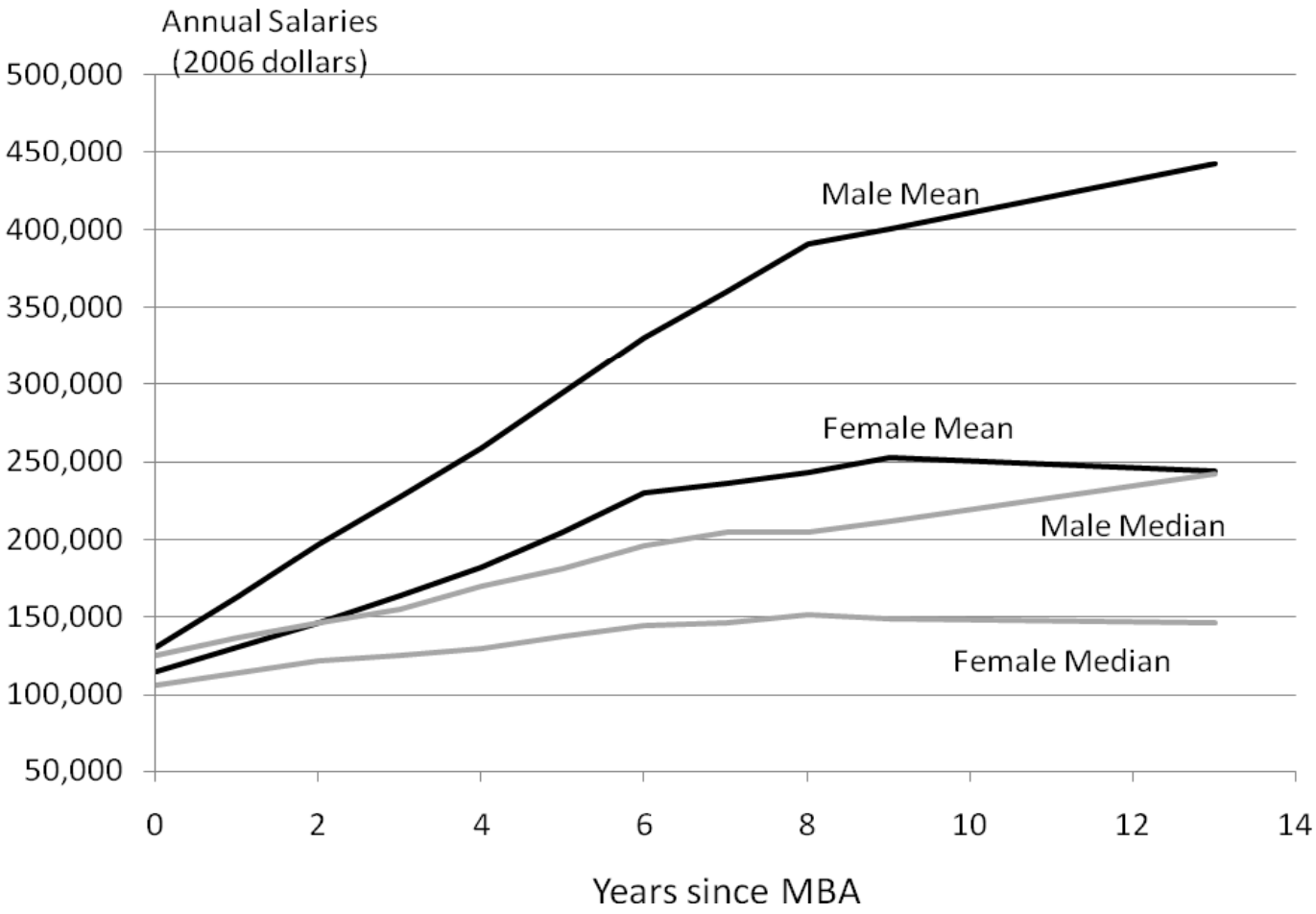
⦿ Yet, perception is that women are still underperforming in the corporate and financial sectors

- Under-representation of women in highest paid jobs in publicly-traded companies, even the more recent years.

Female CEOs in S&P 1500



Male and Female Mean and Median Annual Salaries ($2006) by Years since MBA



Why are Women Underperforming?

- Gender differences in taste and/or ability
  "Female MBAs go into marketing; male MBAs go into finance"

- Women less attracted to winner-take all, highly competitive environments

- Women less willing to negotiate aggressively for pay or promotion

- Career-family conflicts

- Explicit and/or implicit discrimination

This Research Project

- Studies career dynamics by gender for graduates of a top U.S. business school
  - Chicago Booth full-time MBA program, 1990 to 2006

    570 MBAs awarded each year; 24 percent to women

- Describes:
  - Earnings dynamics
  - Labor supply dynamics

    labor force participation, career interruptions and actual experience, hours worked

- Identifies determinants of gender gap in labor supply and earnings

Data

- Web-based survey sent to all 1990 to 2006 alumni:
  - For each "stage" of career since MBA completion:

    Employment status

    Reason for not working; reason for choosing/leaving a job

    If working: annual earnings (beginning and end of stage), hours worked, job function, industry and employer characteristics
  - Number and age of children, current marital status

    Spouse education and earnings

Data

- Individual survey responses :
  - Converted into individual-year panel
  - Linked to administrative data on MBA courses and grades, undergraduate background, GMAT, and demographics.
- Survey response rate: 31 percent
- Minimal differences between survey respondents and non-respondents
  - Among respondents:

    Higher share women

    Higher share U.S. citizens (especially for women)

    Slight positive selection based on undergraduate GPA, GMAT and MBA GPA

Descriptive Statistics

Earnings Dynamics

Potential Contributors to Gender Gap in Earnings:

- MBA course selection and MBA grades
- Labor Supply Dynamics

Descriptive Statistics

Earnings Dynamics

Earnings (in 2006 dollars) by Gender and Years since MBA Graduation

Number of years since graduation:	*Females*	*Males*	*Females*	*Males*
	Mean	Mean	Median	Median
	(1)	(2)	(3)	(4)
0	114,928	130,156	105,882	125,000
1	130,321	162,785	113,404	136,520
2	146,616	196,208	121,184	146,237
3	163,835	227,143	125,000	154,601
4	182,103	258,785	129,412	169,657
5	204,702	294,934	136,957	180,645
6	230,084	330,114	143,874	196,109
7	235,733	359,822	146,342	204,878
8	242,528	391,075	151,261	204,878
9	252,421	400,488	148,432	211,573
10 or more	243,481	442,353	146,342	242,367

Earnings Trajectories (in 2006 dollars) by Years since MBA Graduation and Starting Job Function

Number of years since graduation:	*All Survey Respondents*		*Start in Consulting*		*Start in I-Banking*	
	Mean	Median	Mean	Median	Mean	Median
	(5)	(6)	(7)	(8)	(9)	(10)
0	126,356	122,076	129,623	129,032	173,740	160,612
1	154,691	129,032	143,649	140,307	248,639	232,411
2	184,111	139,516	159,823	151,261	306,221	280,156
3	212,043	146,342	176,254	154,601	352,911	314,019
4	240,861	154,601	196,798	160,085	410,985	332,016
5	274,186	168,093	221,059	170,311	470,608	369,076
6	307,451	175,000	246,169	180,645	500,979	380,645
7	332,762	186,766	263,166	196,109	565,927	398,419
8	357,991	191,739	288,272	191,739	635,775	434,572
9	367,601	186,766	299,331	196,109	691,156	468,120
10 or more	400,715	217,121	362,274	238,710	815,914	559,802

Descriptive Statistics

Potential Contributors to Gender Gap in Earnings:

MBA course selection and MBA grades

Gender Differences in MBA Course Selection and MBA Grades

	Survey Respondents		
	Females	*Males*	*p-value*
	(4)	(5)	(6)
Fraction MBA classes in:			
Finance	0.15	0.18	0.000
Accounting	0.13	0.14	0.003
Economics	0.15	0.15	0.928
Marketing	0.12	0.09	0.000
Statistics	0.06	0.06	0.005
Entrepreneurship	0.03	0.04	0.030
Average GPA in:			
Finance	3.04	3.31	0.000
Accounting	3.13	3.33	0.000
Economics	3.14	3.33	0.000
Marketing	3.30	3.34	0.085
Statistics	3.23	3.38	0.000
Entrepreneurship	3.26	3.37	0.007

Descriptive Statistics

Potential Contributors to Gender Gap in Earnings:

Labor Supply Dynamics

Labor Supply by Gender and Years since Graduation

	Number of Years since Graduation										
	0	1	2	3	4	5	6	7	8	9	≥ 10
	Share not working at all in current year										
Female	0.054	0.012	0.017	0.027	0.032	0.050	0.067	0.084	0.089	0.129	0.166
Male	0.028	0.005	0.002	0.003	0.007	0.004	0.008	0.008	0.006	0.011	0.010
	Share Working full-time/full-year (52 weeks and > 30 to 40 hours per week)										
Female	n.a.	0.89	0.85	0.84	0.82	0.79	0.78	0.76	0.72	0.69	0.62
Male	n.a.	0.93	0.93	0.94	0.94	0.91	0.93	0.94	0.93	0.93	0.92
	Share with Any no work spell (until given year)										
Female	0.064	0.088	0.116	0.143	0.161	0.193	0.229	0.259	0.287	0.319	0.405
Male	0.032	0.040	0.052	0.064	0.071	0.077	0.081	0.082	0.090	0.095	0.101
	Cumulative years not working										
Female	0	0.050	0.077	0.118	0.157	0.215	0.282	0.366	0.426	0.569	1.052
Male	0	0.026	0.036	0.045	0.057	0.060	0.069	0.075	0.084	0.098	0.120

Labor Supply by Gender and Years since Graduation

	Number of Years since Graduation										
	0	1	2	3	4	5	6	7	8	9	≥ 10
	Mean Weekly hours worked for the employed										
Female	59.1	58.8	57.1	56.2	55.3	54.8	54.7	53.7	52.9	51.5	49.3
Male	60.9	60.7	60.2	59.5	59.1	58.6	57.9	57.6	57.6	57.5	56.7

Explaining the Gender Gap in Labor Supply

The presence of children is the main contributor to the gender gap in labor supply

The impact of children on female labor supply differs strongly based on spousal education/income

Gender Gap in Labor Supply: The Role of Children

(controls include Pre-MBA characteristics, MBA performance, cohort*year fixed effects)

Dependent Variable	*Not working*	*Actual post-MBA experience*	*Log (weekly hours worked)*
Female	0.084	-0.286	-0.089
	[0.009]*	[0.039]*	[0.013]*
Female with child	0.20	-0.66	-0.238
	[0.024]*	[0.094]*	[0.031]*
Female without child	0.034	-0.126	-0.033
	[0.007]*	[0.031]*	[0.012]*

Gender Gap in Labor Supply: Children and Spousal Income

(controls include pre-MBA characteristics, MBA performance, spouse salary dummies, cohort*year fixed effects)

Dependent variable	*Not working*	*Actual post-MBA experience*	*Log (weekly hours worked)*
Female with child	0.119	-0.42	-0.169
	[0.046]*	[0.175]§	[0.041]*
Female with child × spouse with high earnings	**0.185**	**-0.538**	**-0.189**
	[0.061]*	[0.240]§	[0.078]§
Female with child × spouse with medium earnings	0.026	-0.148	-0.045
	[0.059]	[0.235]	[0.063]
Female without child	0.047	-0.162	-0.067
	[0.021]§	[0.087]	[0.025]*
Female without child × spouse with high earnings	-0.028	0.122	0.1
	[0.023]	[0.088]	[0.034]*
Female without child × spouse with medium earnings	-0.011	0.1	-0.008
	[0.023]	[0.086]	[0.030]

Explaining the Gender Gap in Earnings

- There are three main contributors to the gender gap in earnings:
  - Training prior to MBA graduation (MBA GPA, fraction finance classes)
  - Labor market experience (Actual post-MBA experience, indicator for any career interruption)
  - Hours worked

- These factors explain the bulk of the gender gap in earnings at *all* horizons following graduation

- Pre-job characteristics matter more in early career; experience and weekly hours worked more in later career

- We estimate a huge earnings penalty for taking any time out

Gender Wage Gap by Number of Years since MBA Graduation

	Number of Years since MBA Receipt					
	0	2	4	7	9	≥ 10
1. With no controls	-0.089	-0.213	-0.274	-0.331	-0.376	-0.565
	[0.020]*	[0.032]*	[0.043]*	[0.062]*	[0.079]*	[0.045]*
With controls:						
2. Pre-MBA characteristics	-0.08	-0.172	-0.221	-0.271	-0.32	-0.479
	[0.021]*	[0.033]*	[0.044]*	[0.065]*	[0.084]*	[0.045]*
3. *Add* MBA performance	-0.054	-0.129	-0.166	-0.2	-0.257	-0.446
	[0.021]*	[0.032]*	[0.042]*	[0.063]*	[0.082]*	[0.044]*
4. *Add* labor market exp.	-0.053	-0.118	-0.147	-0.141	-0.181	-0.312
	[0.021]§	[0.031]*	[0.042]*	[0.063]§	[0.082]§	[0.044]*
5. *Add* weekly hours worked	-0.036	-0.069	-0.079	-0.054	-0.047	-0.098
	[0.020]	[0.030]§	[0.041]	[0.060]	[0.078]	[0.042]§
6. *Add* reason for choosing job	-0.033	-0.058	-0.073	-0.052	-0.031	-0.066
	[0.020]	[0.030]§	[0.040]	[0.060]	[0.079]	[0.042]
7. *Add* job setting characteristics	-0.025	-0.051	-0.046	-0.07	0.002	-0.01
	[0.019]	[0.027]	[0.037]	[0.054]	[0.071]	[0.037]

Are MBA Mothers Negatively Selected?

- Given:
  - The key role of labor supply/hours worked in explaining the gender gap in earnings and
  - The key role of children in explaining the gender gap in labor supply/hours worked…

- …One may wonder whether female MBAs with kids (and those that marry, especially with well-off spouses) are negatively selected

- We find no evidence for this based on observable pre-job characteristics

- Also, fixed effect analysis reveals no drop in a woman's labor supply or earnings in the 2 years that precede the birth of a first child

Impact of First Birth on Salary and Hours

Dependent Variable:	*Annual Earnings (conditional on working)*		*Annual Earnings (0 if not working)*		*Log(Weekly Hours Worked)*	
	Male	Female	Male	Female	Male	Female
Years after birth of first child:						
1 or 2	6,900	-28,301	6,233	-45,871	-0.010	-0.118
	[9,147]	[11,023]§	[9,074]	[10,327]*	[0.005]	[0.016]*
3 or 4	13,680	-45,928	10,965	-78,805	-0.007	-0.184
	[10,757]	[13,500]*	[10,640]	[12,267]*	[0.006]	[0.020]*
5 or more	68,192	-47,657	64,031	-78,238	0.004	-0.172
	[12,019]*	[15,176]*	[11,880]*	[13,739]*	[0.007]	[0.022]*
Years before birth of first child:						
1 or 2	-6,471	-11,447	-6,936	-3,916	-0.003	-0.005
	[8,207]	[9,323]	[8,145]	[9,231]	[0.004]	[0.014]

Are MBA Mothers "Forced Out"?

- The drop in labor supply among mothers could reflect:
  - Woman/household's choices given constraints
  - Labor market discrimination against mothers (with MBA mothers being forced out of the fast-track)
- Multiple pieces of evidence speak against a discrimination interpretation:
  - Differences in labor supply response based on spousal education/ income
  - Fixed effect analysis shows large changes in women's stated reasons to choose a job/leave job once they become mothers

    Rise of family-related reasons in job selection post first birth
  - Conditional on reasons for choosing a job, mothers are no more likely to quit that job because it is not meeting their career expectations

	Not Working: Reasons		*Choose Job: Reasons*		*Leave Job: Reasons*	
	Family	*Career*	*Family*	*Career*	*Family*	*Career*
Years after birth of first child:						
1 or 2	0.103	-0.003	0.148	-0.101	0.012	-0.013
	[0.025]*	[0.007]	[0.031]*	[0.039]*	[0.016]	[0.010]
3 or 4	0.147	-0.004	0.202	-0.180	0.017	-0.003
	[0.036]*	[0.010]	[0.044]*	[0.053]*	[0.018]	[0.012]
5 or more	0.172	-0.013	0.169	-0.096	-0.016	0.008
	[0.048]*	[0.010]	[0.059]*	[0.067]	[0.018]	[0.014]
Years before birth of first child:						
1 or 2	-0.046	0.000	0.001	-0.016	0.046	-0.010
	[0.013]*	[0.006]	[0.016]	[0.024]	[0.017]*	[0.012]
Reason for choosing job dummies	No	No	No	No	Yes	Yes

Summary

⦿Male and female MBAs from this elite program have nearly identical labor incomes and work nearly the same weekly hours immediately following MBA completion.

⦿But the gender gap in annual earnings expands as their careers progress, reaching close to 60 percent at ten to 16 years after MBA completion.

⦿We identify three primary proximate factors that can explain the large and rising gender gap in earnings:

(1) a modest male advantage in training prior to MBA graduation combined with rising labor market returns with post-MBA experience to such training
(2) gender differences in career interruptions combined with large earnings losses associated with any career interruption (of six or more months)
(3) growing gender differences in weekly hours worked with years since MBA

⦿Differential changes by sex in labor market activity in the period surrounding a first birth play a key role in this process.

Discussion

⦿Are career-family tradeoffs faced by female MBAs in the corporate and financial sectors similar to those in other high-powered occupations?

⦿Preliminary empirical exploration suggests that female MBAs appear to have a more difficult time combining career and family than do physicians, PhDs, and lawyers.

Female physicians take the briefest non-employment spells after having a child, followed by PhDs, then lawyers, and finally MBAs who take the greatest amount of time off for family reasons.

Log earnings regressions indicate larger earnings costs to career interruptions for MBAs than for MDs, JDs, or PhDs.

Discussion

- Why such differences? One can only speculate…:

- Inherent differences in production technologies and in organization of work may make the productivity costs to discontinuous experience and more flexible hours greater in the business and corporate sectors than in medicine or academia.

- Economic benefits of re-organizing work to reduce the productivity costs of career interruptions and more flexible work options may be greater in professions where there is a larger share of women in the talent pool.

- More career commitment in those professions requiring greater upfront time investment, such as a PhD or an MD as opposed to an MBA.

- Female MBAs often have husbands with higher earnings than female PhDs and MDs allowing them the luxury to slowdown in the market and spend more time with their children.

Thank You!

If you want to learn more about this research, please email me at:
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